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ABSTRACT

Focusing on 67 studies written since 1970, this report reviews the literature on the topic of school effectiveness to discover those characteristics most in evidence in effective schools and classrooms. Research on effective schools has concentrated on such topics as school climate, the role of leadership, students' preschool experiences, and class size. School climate studies, for example, have examined the high expectations of effective schools and their students' acceptance of school norms. Leadership studies have concluded that the principal sets the tone of success in effective schools by emphasizing high expectations, a congenial atmosphere, reading skills, and careful evaluation of student progress. Students who attend preschools, it has been found, score significantly higher in achievement than others and so contribute to the effectiveness of their later education. Class size, however, has a debatable influence on student achievement. Research on effective classrooms has concentrated on such topics as teacher expectations, individualized instruction, and the role of time in learning. High expectations produce high achievement, it has been found, and most teachers are most effective in working with smaller groups of students. On the role of time in learning, studies have shown that the more time allocated to a content area, the higher was the academic achievement; students spending much time engaged in activities that promote learning are also higher achievers. (JW)

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WHAT RECENT RESEARCH SAYS ABOUT

EFFECTIVE SCHOOLS

AND

EFFECTIVE CLASSROOMS

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FOREWORD

Only a decade ago, educators reading educational research often found that the end result of the research produced "no significant difference." With considerable funding in recent years, the U.S. Office of Education, the National Institute of Education, the National Science Foundation, other public agencies, and private foundations have brought researchers into the field who have produced an impressive accumulation of findings. Herbert Walberg and his associates have called these events "The Quiet Revolution."[1] In a selective summary of ten years of educational research, they identified more than 2,700 research findings related to effective schools and effective classrooms.

Many people in education who have not been reading recent research believe we do not know what good schools and classrooms are, and other people outside education believe that learning is controlled by factors over which educators have no control. Both of these groups are in error.

Ronald Edmonds (1978) of Harvard University investigated the relationship between family background and school effectiveness by comparing the academic performance of 2,500 poor and minority students in 20 inner city Detroit schools. From this research, he concluded that "family background neither causes nor precludes instructional effectiveness. . . . All children are eminently educable, and the behavior of the

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[1]Herbert J. Walberg, Diane Schiller, and Geneva D. Haertel, "The Quiet Resolution in Educational Research," Phi Delta Kappan, (November, 1979), 179-183.

school is critical in determining the quality of that education." He further concluded that he found no evidence in his research or that of others to support the widely held belief that family background primarily determines the quality of student performance and learning.

Schools can make a difference.

These recent research results show that certain schools and certain classrooms have a positive impact on learning. This paper will select from this large body of literature some studies which will help educators understand characteristics of effective classrooms and effective schools.

This material is presented in a non-evaluative manner and without proposals of actions which educators should take. The writer believes that decisions are best left to those who examine and discuss these studies in detail.

It should be pointed out that a number of the results have been reached from field studies which are designed to be quasi-experiments, not true experiments. Other conclusions have generally been reached from multiple regression analyses of data in the attempt to determine which factors seem to be related to the results. In both of these procedures there is the possibility that other factors may be operating; however, the preponderance of outcomes of the studies lean in the directions indicated in this paper. In addition, some of the research reports are analyses of many studies further reducing the possibility of error and placing credence in reported conclusions about effective classrooms and school practices.

EFFECTIVE SCHOOLS and EFFECTIVE CLASSROOMS

Since early in this century when the Stanford-Binet tests were developed to compare student performances with representative groups, educators have been gathering objective information about what goes on in schools and classrooms.

Over the years, researchers have looked at various factors to determine school effectiveness. In 1938 Murray examined a collection of factors in an attempt to describe the effective teacher, but this effort was not useful since it was not specific. Watson developed the test of fairness which attempted to look at teaching by examining teacher bias in certain social situations, but this approach was not very useful because the test was based on social values which change with time.

It is also not very productive to study effective schools and classrooms by studying those variables which are beyond the control of the teacher, such as student health, past experience, readiness, or those factors which are controllable by the students, i.e., ambition or level of aspiration. A more productive approach is the examination of those aspects of teaching which are under the teacher's control.

A longstanding debate of educators is whether teaching is art or science. Teaching, like conducting a symphony, requires that the leader be knowledgeable about both the art and science of instruction. However, the focus here will be on the results of scientific studies of schools and teaching.

Researchers have used many methods to investigate effective teaching. They have used the case study approach to examine a teacher's life

history, biographical sketches of outstanding teachers to identify the teaching processes they use, attempted examinations of the teacher's mind genetically to determine the way these people work, tests to determine the teacher's level of cognitive knowledge, and descriptions of the instructor's teaching "characteristics." These research methods have generally proved to be poor predictors of teaching effectiveness, so, in recent years, researchers have turned to analyzing factual descriptions of school situations and classroom strategies.

RESEARCH ON EFFECTIVE SCHOOLS

Since a tremendous body of research has been conducted in recent years on effective schools, the focus here will be on school factors reported since 1970.

School Beliefs and School Climate

An important factor in conducting an effective school relates to the values which permeate the school (Rutter 1979). Better student outcomes were found in schools where teachers planned courses jointly and were, therefore, working on a common set of beliefs. Also, where the staff determined the behavior expectations and discipline standards desired of students, they were inclined to see that these concepts were implemented.

Effective schools have staffs who believe that students can learn, and these people see to it that high levels of learning take place (Ford Fellows 1979).

Rutter especially emphasized that the "ethos" or climate of the school was an important factor in effective schools. In the book, Fifteen Thousand Hours (the amount of time a student spends in school through high school) Rutter reported on a five-year study conducted in

12 London inner city schools and concluded that the difference between effective and not effective schools was under the control of teachers and administrators. He found that school processes effect school outcomes. School processes make a difference!

School climate also relates to student acceptance of school norms. Rutter reported certain crucial influences in bringing about student acceptance of school norms. First, and foremost, was the fact that the staff exhibited positive attitudes toward pupils. Also, staff and pupils shared activities, including out-of-school activities. Another important factor in aiding students' acceptance of school norms among the schools studied was the fact that there was a high proportion of students who held positions of responsibility in the school.

The Role of the Principal

A series of recent studies has concluded that the principal is a crucial factor in the success of any school. Another study of successful inner city schools (Weber 1978) reported that following factors related to school success--all of which are under the control of the principal:

- strong leadership
- high expectations
- good atmosphere
- strong emphasis on reading
- careful evaluation of student progress

The Ford Fellows study pointed out that in schools which believe that students can learn, this concept originated with the principal and spread to the staff.

Several other recent studies report the concept of strong school leadership being important for school effectiveness (Edmonds 1978),

(Felsenthal 1978), (Irvine 1979), (McLaughlin and Marsh 1978), (Austin 1979).

In the Maryland study, Process Evaluation: A Comprehensive Study of Outliers, Austin reported that strong principal leadership, active principal participation in classrooms, and occasional actual teaching by the principal were observable in high-achieving schools. Principals in high-achieving schools reported that they felt they had control over the school, the curriculum, and the staff (Austin 1979).

Research also shows that in schools where achievement was improving, principals were concerned about instruction; they made their views about instruction known to faculty. They took responsibility for decisions about instruction, and they emphasized academic standards (Wellisch 1978).

The Ford Fellows in Educational Journalism Report is based on a review of the research concerning effective schools, visitations to schools across the country, and factual discriptions of schools. Principals of effective schools were described in the following manner:

- "Good principals tend to rock the boat."
- "Good principals forsake the desire to be loved for the hard tasks of monitoring students' progress."
- "Good principals set achievement goals for their students."
- "Good principals judge their teachers and themselves by high expectations."
- "Good principals tend to observe classes frequently."
- "They structure curriculum and instructional development."
- "They obtain commitment of the staff to a schoolwide program."
- "Principals demand--and get--results, but allow flexibility."

Rutter found strong school leadership in effective schools and reported that principals were aware of staff punctuality. These principals made decisions which were centralized, but the staff perceived that their interests were represented in those decisions. In these schools, principals conducted themselves so that the staff took cues from administrative behavior.

Teachers in effective schools see the principal as the instructional leader, and teachers in higher-achieving schools report that the principal helps strengthen the school improvement process by encouraging team-building and problem-solving in a focused, project-like atmosphere (McLaughlin 1978).

Quantity of Schooling

Considerable research has been done on the various amounts of time schools give to instruction. Looking at the overall effect of increasing the days of the school year, Wiley (1973) found that by raising the number of days by ten, extending the number of hours in the school day to six, and bringing the average daily attendance to 95 percent, the quality of schooling was increased from 24 to 34 percent in achievement. He further concluded that this increase is predicted to increase verbal ability by 33.58 percent, reading comprehension by 65.5 percent, and mathematics achievement by 33.92 percent.

Preschool Experiences

Studies of children's experiences prior to first grade are highly supportive of schools which provide these programs. The research shows that children who attend preschool score significantly higher on achievement measures than those who do not attend these classes.

Looking more specifically at kindergarten and whether achievement is significantly higher for children who attended all-day kindergarten or half-day kindergarten, the research favors all-day kindergarten.

Achievement of children who attend all-day kindergarten and have earlier preschool experiences is significantly higher than children who attend only all-day kindergarten without any prior preschool experience (Neiman and Gastright 1975).

Weikart has been conducting a longitudinal evaluation of children who participated in the Perry Preschool Project which provided preschool experiences to children with IQs below 85 from black, low-income families. Like other preschool studies, the IQ gains made by this group had washed out by the end of third grade. However, the achievement scores showed initial gains which held. In fact, by the eighth grade, nine years after the end of the preschool experience, the experimental group tested the equivalent of more than one full grade higher than the control group.

Safe Schools

An extensive piece of research was completed by the Department of Health, Education, and Welfare in 1978 which studied a random sample of urban, suburban, and rural schools across the country. This study examined violent and safe schools and came to certain conclusions about school size, systematic discipline, arbitrariness, and rewards.

School Size

Large schools in this study tended to have greater property loss through burglary, theft, and vandalism than did small schools. In addition, large schools showed a higher incidence of violence. In

terms of teacher-pupil ratio, the more students each teacher taught each day, the greater the amount of school violence.

With the increasing size of schools, students tended to be more removed from teachers, and the research showed that the less students valued teachers' opinions of the students, the greater was the property loss of that school.

Systematic Discipline

In studying lower incidence of school property loss, it was found that less loss occurred in schools with strict control of classroom behavior. Where students perceived that the school had tight control, the rules were enforced, and the principal demonstrated firmness, there were low levels of student violence.

Lower levels of property loss were also associated with schools where there was coordination between faculty and administration in enforcing order in the school.

Arbitrariness

In schools where students perceived that the administration was arbitrary and administered "unfair discipline," higher rates of violence existed in the schools.

The school personnel's attitudes toward students can be crucial, for this research shows that where schools had punitive attitudes about students, there were higher levels of school property loss.

Rewards

Schools where students demonstrated a strong desire for high grades tended to have less violence than in schools where grades were not emphasized; however, the former schools tended to have more

property loss. This would tend to suggest that where there is a strong emphasis on high grades, those students who are not successful will tend to lash out at the school and destroy school property. The higher incidence of property loss also existed in schools where teachers used grades to discipline students.

Class Size

Gene Glass and Mary Smith (1979) have completed an extensive meta-analysis of 76 studies of class size and concluded that there is a positive relationship between smaller class size and student achievement. Several statements made by Glass and Smith are impressive. They concluded that children gain an average of 1.0 grade equivalents per year when taught in a class of 40, while they gain 1.3 equivalents if taught in classes of 20 pupils. They also state that increasing class size from 20 to 40 will take its toll on pupil attitude and interest, teaching practices, and teacher morale. The research also suggests that where teachers continue to teach classes of 20 like classes of 40 there will be no change in achievement.

This research and the meta-analysis process used have been vigorously criticized by Educational Research Service which has concluded from its analysis that "within the mid-range of about 25 to 34 pupils, class size seems to have little if any decisive impact on the academic achievement of most pupils in most subjects above the primary grades" (ERS 1978). Appearing to agree with Glass and Smith in some degree, ERS concluded that smaller classes <u>can</u> have a positive influence on pupil achievement in reading and mathematics in the primary grades and for low-achieving and economically or socially disadvantaged students.

In Glass' rebuttal, he concedes no point to ERS' criticism (Glass 1980).

Pull-Out Programs

Pull-out programs are those where students leave their regular classrooms and go to work with a person other than their regular classroom teacher, often in a remedial program. Glass and Smith (1977) found that the risks of pull-out programs far outweigh their gains. This study showed that about 75 percent of compensatory education pupils are pulled out of their regular classrooms and taken to another room to be taught by a remedial teacher. It was noted that these special teachers often have little or no training in teaching and meeting the academic needs of remedial students.

This study showed a consistent negative relationship between the time pupils spend in pull-out classes and their reading and math achievement. Pull-out often resulted in the negative labeling of many students who were viewed by the teachers as less capable, with less expected of them. Lower teacher expectations resulted in lower levels of student achievement.

Improving Schools

A comparison of six "improving" schools and two "declining" schools identified the differences and the qualities that contributed to raising students' achievement levels (Brookover and Lezotte 1977). Positive factors found in the "improving" schools were:

1. Teachers and administrators accepted and emphasized the mastery of the basic skills in reading and math.

2. School personnel were committed to bringing all children to minimum achievement, and more time was spent on direct reading and math instruction.
3. Principals and teachers believed that all students could master the basic skills.
4. The staff accepted the concept of accountability to a greater degree than in the "declining" schools.

Hallmarks of Effective Schools

The Rutter (1979) study identified the following hallmarks of effective schools:

- Lessons were prepared in advance.
- The whole class was taught.
- Pupils were kept actively engaged.
- High expectations were the order of the day.
- School personnel modeled good behavior.
- Students obtained feedback about acceptable behavior.
- School personnel used a lot of praise.

RESEARCH ON EFFECTIVE CLASSROOMS

In addition to the encouraging amount of new research which has appeared in the past decade concerning effective schools, even more information has come from the research about what actually goes on in effective classrooms.

Some of the information in the previous section of this paper is relevant to the study of classrooms, i.e., effective schools tend to have high expectations of students; however, that information will not be repeated again in this section.

Factors That Influence Achievement

One of the factors which Bloom (1976) has identified as important in classrooms where students learn more relates to the quality of instruction. He has described three key factors which have an impact on learning. (1) The degree to which the original instruction, or the student's cognitive entry behavior, is crucial to the new learning, for, if the teacher has taught, or in some way the student has learned material which interferes with the new learning, the effectiveness of the new instruction will be diminished. (2) The degree to which the teacher is able to give the student appropriate feedback about the student's performance, the greater are the chances for the learnings to be retained. (3) Where teachers were able to provide corrective measures concerning incorrect students' responses, the classroom instruction was more effective.

Bloom also found that academic feedback was more strongly and consistently related to achievement than any other single teaching behavior.

School Processes

Teachers working in effective classrooms demonstrate that they believe students can master the work and proceed to arrange their program on that premise. They also are committed to seeing that their students learn. Brookover (1979) found that teachers in effective classrooms used more positive reinforcement for student achievement and used it on a consistent basis. Further, he found that these teachers were discriminating in their verbal and nonverbal rewards; that is, they did not reward incorrect answers or faulty thinking.

Teacher Expectations

Thomas Good (1981) has reviewed ten years of research on teacher expectations and student perceptions and concluded that teachers expect students to behave in specific ways and attain certain levels of achievement. Teachers behave differently toward different students. These researches show that high-expectation students achieve high levels, and low-expectation students' achievement declines. Over time, the student's achievement and behavior will conform more and more closely to the teacher's expectations.

Good's research shows that teachers influence the behavior of students by

- paying less attention to slow students
- smiling more and having more eye contact with high achievers
- calling on slow students less frequently
- waiting less time for slower students to answer
- seating slow students farther away, therefore providing less monitoring by the teacher

- criticizing more frequently the incorrect answers of slower students
- giving slow students less feedback
- interrupting slower students more frequently
- requiring less effort and work from slower students
- praising slower students less often for correct or marginal responses

Some teachers reward marginal or wrong answers, while others criticize slower students for incorrect responses. In either case, these teachers provide feedback which is not designed to bring about high performance.

Teacher expectations appear to have considerable influence during the primary years when children accept the authority of the teacher and are not yet fully aware of their own power to influence.

Good (1979) has concluded that low-achieving students can receive little or no reinforcement for risking an unsure answer, and they often receive a penalty for an unsuccessful risk. Both reactions lower student achievement.

Classroom Climate

Research shows that higher-achieving classrooms are "convivial, democratic, and warm," while practices of belittling, ridiculing, scolding, shouting, and criticizing student behavior prevailed in lower-achieving classrooms (Tikunoff, Berliner, and Rist 1975). Research has found that teachers in effective classrooms use an "intermediate position" for classroom control, rather than a self-defeating approach based on criticism of student behavior and imposition of rigid controls (Medley 1978).

A positive classroom environment is related to how teachers use praise and criticism in dealing with students. Effective teachers use praise and criticism in relation to students academic activities and behaviors, but they do not use praise or criticism in relation to nonacademic student behavior in the classroom.

Brophy's recent review of research on the use of praise shows that effective teachers use little praise or criticism. An important factor in understanding what is being said here is to understand Brophy's definition of praise. He has defined praise as "a more intense or elaborated reaction to student behavior than is needed. . . . (Brophy 1981).

Effective teachers provide strong leadership by directing activities in a businesslike manner (Rosenshine 1977).

Classroom Management

Researchers have found that learning basic skills is directly related to an organized and structured classroom (Berliner and Rosenshine 1977). However, what effective classroom management is remains unclear since there is no commonly agreed upon definition. In fact, John Goodlad (1979) concluded the National Society for the Study of Education yearbook on this topic by noting the limited body of empirical research on this topic and the lack of adequate descriptions of classroom management. Nevertheless, Thomas Good (1979), in reviewing many, many recent studies on teacher effectiveness said, that "managerial skills of teachers are strong determinants of student learning."

In Ruttar's (1979) study of secondary schools, he found that children's classroom behavior was much better when four factors were

present. (1) The teachers had prepared the lesson in advance. (2) The teachers wasted little time in setting up the lesson. (3) The teachers arrived and started class on time. (4) The teachers mainly directed their attention to the whole class.

Mastery Learning

Bracht and Hopkins (1972) has found that it is possible to predict students' eleventh grade achievement from their recorded achievement in third grade. This can be done with accuracy in two-thirds of the cases. Similarly, Bloom's research (1976) shows that 80 percent of a student's post-test score can be predicted by pretest scores alone. These and other researchers have shown that learning patterns and levels tend to remain quite consistent.

The question for educators interested in improving the performance of students, especially low-achieving students, is how to alter this situation.

Block (1970, 1976) and Peterson (1972) have found that where teachers provide time and help for slower students and these students are motivated to use the time and help available, 90 percent or more of these students finally reach the learning criterion set in mastery learning studies.

Bloom's research shows that when mastery learning techniques are used, 80 percent of students can achieve a learning criterion usually attained by only about 20 percent of the students.

Block and Burns (1976) have described the following four elements in mastery learning strategies:

1. The teacher determines a set of specific objectives that students will be expected to master at some high level of performance.

2. The teacher breaks the course into small learning units so as to teach only a few objectives at one time.

3. The teacher designs the experiences with the assumption that every student can master the material. The teacher will teach; then test for learning. When the teacher learns that certain students have not yet learned the material, the teacher provides those students with additional help until they come up to mastery.

4. The teacher designs an evaluation system that is based on each student's mastery of the learning, rather than on a comparison of classmates' achievement.

Bloom (1976) found that when students are taught in this way, they spend about 85 percent of their classroom time on task, while the nonmastery students spent only 50 percent on task.

Individualized Instruction

Donald Medley (1977) of the University of Virginia reported that his review of almost 300 studies revealed clear differences among teachers in their ability to produce lasting gains on tests. More effective teachers of disadvantaged primary students spent less time on classroom management (because they are well organized and prevented problems from occurring), gave less independent seat work, asked more "low-level" questions, and taught large groups or the whole class.

Barak Rosenshine's (1979) research shows that "direct instruction" is effective because it keeps students engaged in learning "with a high level of accurate responses." Students learn best, he says, in classrooms where there is an academic emphasis, instruction is teacher-directed, and students are taught in groups--not one at a time.

Rosenshine is frankly skeptical of programs in which students work alone most of the time. "If a teacher has 20 kids and works with each one individually, that means each kid gets three minutes out of the hour--and he or she works alone 57 minutes out of the hour! If the

student works directly with the teacher for 20 minutes, he or she may be ready to work alone the other 40 minutes."

According to Medley, "The amount of attention per child just has to go down," when the teacher uses this kind of individualization. Other researchers are more cautious but generally agree. Thomas Good's study of teaching fourth grade mathematics shows that a few teachers use small groups and get very good results, but, he says, "Most teachers who use small groups instead of the whole class tend to fall toward the middle of the distribution."

Rita Dunn of St. John's University condemns programs in which students work separately going through the same material at different rates. Her review of relevant studies shows that students learn best when teachers diagnose students' learning styles and plan instruction according to individual differences.

Richard Rossmiller spent eight years as head of the Wisconsin Research and Development Center. From his research, he concluded that it is easier for many teachers to keep students on task if they use direct instruction because then "every student is supposed to be doing the same thing." But he also finds that some teachers are much better than others at keeping students engaged "and the instruction mode doesn't make a heck of a lot of difference."

Although some teachers can make individualized instruction work, Ruff (1978) reported finding a "consistent and negative relationship with student achievement levels when the teachers worked alone with only one or two children in basic skills improvement programs."

Direct Instruction/Active Teaching

Recent research on effective classrooms has emphasized what Rosenshine (1979) has called direct instruction and Good (1979) has called

active teaching. Rosenshine includes the following critical aspect of direct instruction:

1. Teachers place a clear focus on academic goals.
2. Teachers make an effort to promote extensive content coverage and high levels of student involvement.
3. Teachers select instructional goals and materials and actively monitor student progress toward those goals.
4. Teachers structure activities, and they provide feedback which is immediate and academically oriented.

That direct instruction is associated with increased learning gains is a common, almost universal conclusion of recent research. Stallings and Hentzell (1978) concluded that higher achievement gains are associated with orderly classrooms, persistant application to academic tasks, teachers' active involvement with the class, and with a well organized and structured learning situation. In contrast, lower gains on achievement tests were found to be associated with high rates of student socialization and misbehavior and with teachers working with one student at a time for extended periods or doing classroom clerical tasks.

Good (1979) suggests that the reason direct instruction survives as a viable model is because teaching the class as a group or whole works. From his research, he concludes that individualization does not appear to be strongly associated with achievement.

Ebmeier (1979) examined Good's data and found that the procedure worked better for some students than for others; however, all student types did better in direct instruction situations than in control situations.

Good (1979) concludes that direct instruction is not a set of specific behaviors or a generic form of teaching that will work for all teachers and all students in all settings. Rather, it is an orienting concept that must be adjusted sensibly and sensitively to different people and different educational settings.

Time as a Learning Factor

Many studies over the years have demonstrated that the more time that is given in classrooms to a particular study, the more children achieve. The Beginning Teacher Evaluation Study (BTES) has added to previous knowledge about time.

The BTES study originally started out to find the generic teaching competencies needed by every beginning teacher, but soon changed the focus of the research to examine the relationship between time factors and achievement in second grade and fifth grade reading and mathematics classes. This study is different from the previous studies of time in that it did not collect information on broad content areas, but gathered detailed information on highly specific topics within each content area, i.e., information on 26 specific content tasks such as decoding short vowels, decoding compound words, and effectiveness in oral reading. Also, one of the differences between this study and previous studies is that it not only looked at allocated time and engaged time, but added the concept of academic learning time (ALT).

Allocated time was defined as that time made available during school hours for the student to work on the assigned tasks, while engaged time is the time that the student actually spends paying attention to the learning task. Academic learning time (ALT) is the amount of time a

student actually spends engaged in an academic task that she or he can perform with high success.

Students were said to have low success when they made correct responses at about the chance level, and medium success when the student demonstrated partial understanding with some correct responses above the chance level. High success was when the student performed the task with only occasional, careless errors.

The BTES study clearly shows that allocated time is positively associated with learning. The time allocated to mathematics in second grade classes varied from 25 minutes per day in one class to 60 minutes per day in another. In fifth grade reading, allocated time was found to vary from about 60 minutes per day in some classes to about 140 minutes per day in others. In all cases, the more time allocated to a content area, the higher was the academic achievement.

The engaged time rate is positively associated with learning. Students who pay attention more, learn more. It should be pointed out, however, that the average rate of engagement varies widely across classes and among individual students. Brady's research (1977) shows that some classrooms engage students four percent of the time, while others engage 90 percent of the time. Stallings and Kaskowitz (1974) caution that more is not always better. They found that student achievement increased as student engaged time increased up to 95 minutes per day in first grade math, but additional time beyond that point was negatively related to student gains.

Rosenshine's research (1979) shows that teacher-led groups produce an engagement rate of 84 percent, but seatwork groups were engaged 70 percent of the time. It is interesting to note that Rosenshine also

observed that meaningless busywork was relatively rare in seatwork assignments. This was an important factor in producing an engagement rate as high as 70 percent in seatwork groups.

The BTES research shows a positive association of time of high success with learning, not just for immediate learning, but in its later effects. High success rates contribute to high levels of student self-esteem. High success activities also produced higher achievement scores in the spring, better retention of learning over the summer, and more positive attitudes by the students toward school.

A caution is offered in terms of the BTES research that too high a rate of high success could inhibit the development of persistence. This would tend to suggest the need for a balance between high success and more challenging work. This research also showed that older and more skilled students did not require as much high success experience.

Conversely, time students spend with low success is negatively associated with learning.

When this research looked at the diagnostic abilities of teachers, it was found that there was a positive relationship between a teacher's diagnostic ability and the students' achievement. Better diagnosticians generally had students who showed higher rates of engagement, showing that these teachers were able to keep students engaged and on task.

Student engagement rates were higher when they received more contact from an instructor during the seatwork. The implications of this finding for class size and the use of teacher aides are obvious.

Time spent on helping students understand the structure of the lesson and directions was time well spent, for this technique was positively associated with high student success.

This research shows that students who received more explanation in response to their specific need tended to have fewer high success tasks and more low success tasks. This finding may be a signal that, for these students, the student needs a change in his/her instructional program, or the level of difficulty of the assignment is too great, or the student has not had adequate preparation for the seatwork assignment.

Where teachers tended to use their time in issuing frequent reprimands, these behaviors were negatively associated with learning. Students who received more frequent reprimands tended to show less growth. . .

The BTES research concluded that where classes were primarily oriented toward affective outcomes, such as student attitudes and feelings, as opposed to academic outcomes, there were lower student engagement rates, lower success rates, and lower student achievement. This conclusion does not suggest that classes should be free from affect. Obviously, affective aspects of a classroom are very important. Rather, the conclusion is that when attention to academic instruction is substantially reduced, students achieve less.

The Effective Teacher

A series of studies has shown that student achievement is greater when the teacher selects classroom activities which reflect sound principles of learning and are appropriate for the students' learning styles and current levels of achievement (Ruff 1978). These teachers also ask questions which are near students' ability levels, provide opportunities for students to build on previous knowledge, and provide for student success (Brophy and Evertson 1974).

Medley's (1978) research shows that effective teachers are less likely to elaborate on or discuss students' answers. A surprising finding is that effective teachers of low socioeconomic students do not encourage them to analyze, synthesize, or evaluate, but they provide students with situations in which they can successfully answer narrow questions. These teachers were emphasizing basic skills of students and helping them acquire solid foundations upon which critical thinking could be built.

According to Medley (1977) and Gow (1976), effective teachers assign more seatwork, but they do not allow students to do it unsupervised. These studies show that student achievement is low when students are assigned a great deal of seatwork to do totally independently. A positive and significant relationship was found between higher student achievement and direct supervision by the teacher.

Throughout these studies there is an emphasis on the importance of school personnel knowing the results of the research and being able to apply different techniques in different situations. The following important characteristics of effective teachers are contained in the Ford Fellows in Educational Journalism study (1979) which showed that effective teachers:

1. "believe that children can succeed."
2. "have confidence in the principal's ability."
3. "are able to maintain discipline in their classes without spending time punishing students."
4. "appear to understand the rules."
5. "plan their lessons in advance."
6. "seek appropriate help."
7. "structure their classrooms, using whole group teaching techniques to fulfill their expectations."

8. "are not members of a transient teaching staff."
9. "handle most discipline problems themselves."
10. "rarely send children to the principal's office."
11. "care about their students."
12. "take a sense of pride in teaching."

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